

Oral Electrical Burn Injury in a 36 Year Old Female - A Rare Case Report.

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Abstract: This is a case of oral electrical burn of a 36 years old female patient, who unknowingly came into contact with live electric wire in her home, when she was trying to peel it off. Following which she sustained massive burn of oral commissure, lips, tongue, and floor of mouth. We performed an exhaustive search of literature and find that oral electrical burns are very rare and even rarer to find this in the adult females as they are occupationally less exposed to these kind of accidents. Thus we believe this is the first case of its kind and hence this report should be considered for publication.

Keywords-electric burn, oral electric injuries, electric current

INTRODUCTION

Electrical injuries constitute a small minority of total burn patients. Approximately 2-75 of all admissions to specialized burn units are due to electrical injuries. Electrical burns in the oral cavity account for 2.2% of all electrical burns and only 0.12% of all burns; thus, the incidence of electrical burns in the oral cavity is relatively low. As this type of injury occurs in the oral cavity when an individual sucks or chews on a live electrical wire, extension cord, plug or outlet, most cases occur in toddlers or preschool children, and adult cases are extremely rare. Present case is the rare presentation of oral electrical burn in the adult female.

CASE REPORT

Here we describe a case of an electrical burn in a 36-years-old female, who accidentally put live electric wire in a fan in her mouth. Wire was plugged to a electric board having low voltage household current. Patient was an illiterate person; she put this wire in her mouth in order to peel it off for extension. Contact of the live electric wire resulted in injury to the commissure of the lip, tongue, or floor of the mouth. She was admitted in emergency surgery department of our institute one hour after the burn. In the emergency surgery department she was resuscitated promptly. There was massive edema over the face of the patient (fig 1). Later on in the surgery ward multiple dressings were done and after facial edema was subsided completely (fig 2).

Debridement of the necrosed areas was done and patient was attached with plastic surgery department for follow up.



Fig1

Fig2

Fig1: Photograph of the patient showing oral electrical burn (at the time of admission)

Fig 2: Photograph of the patient after debridement of the wound (at the time of the discharge)

DISCUSSION

Electrical burns to the mouth often present as small oval, grey-yellow ulcers with a depressed centre. Characteristically, the pain from the lesion is not severe. These burns most commonly involve the commissures of the lips, but have been known to involve the tongue, buccal sulcus, alveolus, and palate. Oral electrical burns can produce devastating, full thickness destruction of the lip and cheek, resulting in severe functional disabilities and facial deformities. Saliva serves as a conduction medium connecting the polarity gap of the wires of the electrical source. Understanding electrical injuries requires a basic knowledge of general physics. There are 6 variables that contribute to the outcome of any electrical injury: voltage (V), resistance (R), current (I), type of current (alternating or direct—AC or DC), duration of exposure to current (measured in seconds), and the current's pathway in the body. In contact burns, the current is transmitted from the electrical source and travels through the tissues along the path of least resistance. The immediate response of the tissues to the applied energy is coagulation of the tissues, resulting of necrosis. Studies done in burn centers find that the number of female patients is small. In our case, the patient accidentally came into contact with low voltage electrical current and sustained electrical burn injuries leading to oral burn. With multiple dressings and debridement's the patient improved well and discharged in satisfactory condition. Currently surgery may be performed at a later date, as needed.

CONCLUSION

Electrical oral burn injuries are rare as we have mentioned above and even rarer to find these injuries in adult females, as they are less occupationally exposed to these kinds of accidents So this is a unique case of its kind and suitable for publication. Such injuries can be prevented with proper educational programmes designed to suit the community.

BIBLIOGRAPHY

- 1.) Arnoldo BD, Purdue, Gf, KowalskeK, et al. Electrical Injuries; a 20-year review. *J burn Care Rehab* 2004;25:479-484.
- 2.) Donolan MB. Reconstruction of electrical burns of the oral commissure with a ventral tongue flap. *Plast Reconstr Surg* 1995;95(7):1155-1164.
- 3.) Kouwenhoven WB. the effects of electricity on the human body. *Bull Johns Hopkins Hosp* 1964;115:425-446.
- 4.) Palin WE Jr, Sadove AM, Jones JE, et al. Oral electrical burns in a pediatric population. *J Oral Med* 1987;42:17-21.
- 5.) Shimoyama T, Kaneko T, Suzuki T, Horie N A case of an electrical burn in the oral cavity of an adult. *J Oral Sci.* 1999 Sep;41(3):127-8.
- 6.) Xiao J, Cai BR. A clinical study of electrical injuries. *Burns* 1994;20:340-346.

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LITERATURE REVIEW

Cardiovascular Risk of Oral Antidiabetic Drugs: Current Evidence and Regulatory Requirements for New Drugs Gopi Krishna Panickera, Dilip R Karnada, Vaibhav Salvia, Snehal Kotharia © JAPI • January 2012 • VOL. 60 pg 56

Better control of diabetes mellitus reduces microvascular complications, but has limited effect on macrovascular complications including cardiovascular mortality. A spate of controversial reports has shown that some new oral antidiabetic drugs may paradoxically increase cardiovascular events and mortality. We review here published data on cardiac safety of currently available oral antidiabetic drugs. Literature search was performed for "cardiovascular risk" and "antidiabetic drugs" or individual oral antidiabetic drugs. Some sulfonylureas increase cardiovascular risk presumably by preventing protective ischemic cardiac preconditioning. Rosiglitazone increases risk of myocardial infarction and death possibly by increasing serum triglycerides and LDL-cholesterol levels. Muraglitazar increased risk of cardiovascular death, myocardial infarction, or stroke due to as yet unidentified reasons. Only insulin sensitizing drugs like metformin and pioglitazone have been consistently shown to reduce cardiovascular risk. Beneficial effects of tight glucose control with insulin or insulin secretagogues on macrovascular complications are inconsistent; their benefits may be negated by increased risk of hypoglycemia which in turn increases adverse cardiovascular events. Increased cardiovascular risk of some antidiabetic drugs was missed during drug development and detected only on meta-analysis of clinical trial data. Regulatory agencies in North America and Europe have therefore proposed stringent guidelines for study design, data analysis and quantification of cardiovascular risk of new antidiabetic drugs. Physicians should weigh the cardiovascular risk against potential benefits when prescribing antidiabetic medications. The proposed regulatory measures will ensure approval of safer drugs, but may also lengthen the drug development cycle or even deter development of potentially useful drugs.